



REMARKS

This submission is in response to the Restriction Requirement dated August 21, 2001. Claims 19-62 have been canceled, without prejudice or disclaimer.¹ Claim 80 has been amended. New claims 83-111 have been added. Accordingly, claims 1-111 are pending and are at issue. Consideration of the above identified application, in view of the above amendments and the following remarks, is respectfully requested. No new matter has been added by way of these amendments.

Amendment to Specification

The specification has been amended to identify the nucleotide sequences set forth in Figures 17-28 with sequence identifiers (SEQ ID NOS: 37-48, respectively).

Enclosed herewith is also a substitute paper copy and substitute computer readable form (diskette) containing sequence disclosures. The substitute sequence listing is submitted to include the nucleotide sequences of Figures 17-28 in the sequence listing. Pursuant to 37 C.F.R. § 1.821, Applicants hereby confirm that the contents of the paper copy of the substitute Sequence Listing filed herewith and entitled "SEQUENCE LISTING", and of the identically labeled diskette enclosed

¹ The subject matter of claims 19-62 is being pursued in a related application, U.S. Serial No. 09/571,553.

herewith, specifically the ASCII-encoded file therein labeled "Seqlist.txt", are identical. This sequence submission contains no new matter.

Amendments to Claims

Claim 80 has been amended to correct a typographical error. More specifically, claim 80 has been amended to depend from claim 79 instead of 80.

New claims 83-111 have been added to more particularly recite and specifically set forth the galactose oxidases of the invention. These new claims are fully supported by the specification as filed. For example, the mutations in a galactose oxidase amino acid sequence recited in new claims 83-110 are supported by claims 63-82, as filed, by Figures 17-28, and by Table 4 in the specification (pages 47-48). New claim 111 is supported by the amino acid sequence in Figures 17-28.

Response to Restriction Requirement

In the Official Action mailed August 21, 2001, the Examiner required restriction of the claims to one of the following claim groups:

- I. Claims 1-18, drawn to a method of producing DNA encoding galactose oxidase.

- II. Claims 19-62, drawn to DNA encoding galactose oxidase.

III. Claims 63-82, drawn to galactose oxidase.

In response, Applicants hereby elect claim group III, corresponding to claims 63-82, without traverse. Applicant submits that new claims 83-111 relate to the same inventive concept, namely galactose oxidase, and that these new claims therefore should be prosecuted together with claims 63-82 in this application.

Response to Election Requirement

The Examiner also required election of one of the galactose oxidase mutant species.

As mutant species, Applicants elect galactose oxidase having the mutation V494A. Applicants note that upon allowance of a generic claim, Applicants will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim. In the pending claims, claims 63-82, 84, 86, 89-102, and 107-110 read upon the elected species.

Therefore, in view of the above amendments and remarks, an early and favorable action on the merits of this application is earnestly requested.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



Robert Schaffer
Reg. No. 31,194
Attorney for Applicants

DARBY & DARBY, P.C.
805 Third Avenue
New York, N.Y. 10022
Phone (212) 527-7700

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PATENT TRADEMARK OFFICE

Docket No: 9373/1G811US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Frances H. ARNOLD; et al.

Serial No.: 09/722,602

Art Unit: 1652

Confirmation No.: 5781

Filed: November 27, 2000

Examiner: Y. Pak

For: DIRECTED EVOLUTION OF OXIDASE ENZYMES

MARK-UP FOR AMENDMENT

Hon. Commissioner of
Patents and Trademarks
Washington, DC 20231

October 22, 2001

Sir:

IN THE SPECIFICATION:

Please note that the brackets ("[" and "]") indicated in the text below were present in the disclosure as filed. Any text to be deleted is indicated by brackets in bold ("[" and "]").

Please amend the paragraph on page 9, lines 2-3, to read as follows:

FIGS. 17A-C show the sequence of representative mutant 9.16.8D2 of
the invention [SEQ. ID NO. 10 and 37]

Please amend the paragraph on page 9, lines 4-5, to read as follows:

FIGS. 18A-C show the sequence of representative mutant 9.16.6C11 of
the invention [SEQ. ID NO. 11 and 38]

Please amend the paragraph on page 9, lines 6-7, to read as follows:

FIGS. 19A-C show the sequence of representative mutant 9.16.16D12
of the invention [SEQ. ID NO. 12 and 39]

Please amend the paragraph on page 9, lines 8-9, to read as follows:

FIGS. 20A-C show the sequence of representative mutant 11.03.6D3 of
the invention [SEQ. ID NO. 13 and 40]

Please amend the paragraph on page 9, lines 10-11, to read as follows:

FIGS. 21A-C show the sequence of representative mutant 11.03.10C3
of the invention [SEQ. ID NO. 14 and 41]

Please amend the paragraph on page 9, lines 12-13, to read as follows:

FIGS. 22A-C show the sequence of representative mutant 11.03.10D6
of the invention [SEQ. ID NO. 15 and 42]

Please amend the paragraph on page 9, lines 14-15, to read as follows:

FIGS. 23A-C show the sequence of representative mutant 11.03.13E12
of the invention [SEQ. ID NO. 16 and 43]

Please amend the paragraph on page 9, lines 16-17, to read as follows:

FIGS. 24A-C show the sequence of representative mutant 1.06.20E7 of
the invention [SEQ. ID NO. 17 and 44]

Please amend the paragraph on page 9, lines 18-19, to read as follows:

FIGS. 25A-C show the sequence of representative mutant 1.D4 of the
invention [SEQ. ID NO. 18 and 45]

Please amend the paragraph on page 9, lines 20-21, to read as follows:

FIGS. 26A-C show the sequence of representative mutant 2G4 of the
invention [SEQ. ID NO. 19 and 46]

Please amend the paragraph on page 9, lines 22-23, to read as follows:

FIGS. 27A-C show the sequence of representative mutant 3.H7 of the invention [SEQ. ID NO. 20 and 47]

Please amend the paragraph on page 9, lines 24-25, to read as follows:

FIGS. 28A-C show the sequence of representative mutant 4.F12 of the invention [SEQ. ID NO. 21 and 48]

IN THE CLAIMS:

Please note that the brackets ("[" and "]") indicated in the text below were present in the disclosure as filed. Any text to be deleted is indicated by brackets in bold ("[" and "]").

80. (Amended) The galactose oxidase of claim [80]79, further comprising a silent mutation at S550.